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CERLIS Series  
Volume 5

Maurizio Gotti, Stefania M. Maci, Michele Sala (eds)

**The Language of Medicine: Science, Practice and  
Academia**

CELSB  
Bergamo

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THE LANGUAGE OF MEDICINE:

SCIENCE, PRACTICE AND ACADEMIA

Maurizio Gotti, Stefania Maci, Michele Sala (eds)

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ANNA LOIACONO

## The Language of Fear: Pandemics and their Cultural Impact

### 1. Introduction

While phobias, such as arachnophobia or claustrophobia, are part of mankind's make-up, no phobia has captured society's attention and imagination over the centuries more grippingly than the fear of infection and death from pandemics. Boccaccio's gruesome witticism that the victims of the Black Death often ate lunch with their friends and dinner in Paradise with their ancestors (see Section 2) is a testament to the fact that, far from being a figment of the imagination, pandemics have had a devastating impact on society for hundreds of years, seven being recorded between 1816 and 1975 for cholera alone. The Spanish flu pandemic killed an estimated 75 million people while the 14<sup>th</sup> century Black Death pandemic is believed to have killed one third of the population of Europe.

If medieval authors, such as Boccaccio and Chaucer, drew inspiration from the Black Death, it is because, together, fact and fiction pack a powerful punch when raising pandemic-linked fears. This has attracted several writers: from Virgil, with his description of an anthrax epizootic (Sternbach 2003: 463-4), to today's epidemic-inspired and ominously-named novels, such as Follett's 2007 *World Without End* and Cook's *Outbreak*. Precisely because of their foundations in historical reality, the popular press (Gwyn 1999; Jen 2008), in particular, has engaged in fear-mongering that plays on these apprehensions. The covers of famous magazines have 'heralded' the new diseases of the 21<sup>st</sup> century on many occasions (Jen 2008: 181-2). For *Newsweek* these have included 'Fear and the flu: the new age of pandemics' (May 2009) and 'SARS: What you need to know. The

new age of epidemics' (May 2003), and for *Time*: 'SARS Nation. How this epidemic is transforming China' (May 2003); 'Bird Flu. Is Asia hatching the next pandemic?' (February 2004); 'Avian flu: Death Threat. Special report: Inside the global race to avert a pandemic' (September 2005) and 'H<sub>1</sub>N<sub>1</sub>: As students head back to school this September, swine flu could infect millions. How bad will it get?' (August 2009). While swine and avian flu, by comparison with malaria and HIV, have had little impact in terms of contagion and death, their pulling power on popular imagination, at least in Western media, has been proportionately greater, all evidence of the growth in the global 'healthcare and healthscare stories' market, whose features are increasingly investigated by medical communication specialists in terms of audience health literacy, government monitoring and the 'qualifications' of medical journalists (Hinnant/Len-Ríos 2009, Luther/Zhou 2005, Tanner 2004).

What concerns us in this chapter, however, is the fact that fears of being infected by plagues, and succumbing to them in a very short span of time, are mostly expressed indirectly, eschewing words such as *fear*, *apprehension*, *scare*, *hysteria*, *panic* or lexical equivalents. For example, of the six *Newsweek* and *Time* titles mentioned above, only the first one uses the word *fear*. As a deliberate act of arousing public fear or alarm about a particular issue, fear-mongering is made more effective in terms of newsworthiness and reader impact through indirect reference to the unknown than through specific description of fears or reassuring positive messages. Compare *Time*'s positively-oriented 'Polio' cover (March 1954) about John Salk's 1954 successful field trials of inactivated poliovirus vaccine with *Newsweek*'s negatively-oriented title 'A back door for Ebola: smuggled bushmeat could spark a U.S. epidemic' (August 2014) provoking considerable hue and cry (Al Jazeera 2014) some sixty years later.

How then, as text analysts, do we reconstruct the language of fear? If, as the examples given above show, fear-raising, with its focus on the hypothetical and sensational, is indirect, then the techniques used to reconstruct the expression of fear in English-language texts also need to be indirect. There are other problems, too. As suggested above, changes in culture have modified the way we think about and react to pandemics. This has long been recognised by specialists in

medical communication (Lakoff 2008, Schell 1997, Strassberg 2004, Strong 1990) but calls for models and techniques of text analysis, which, though focused on the contemporary world, are also diachronic in nature, *i.e.* capable of describing our cultural and linguistic inheritance from the past, and explaining why, for example, the Elizabethan view of the Black Death, and Shakespeare's descriptions of it, are significant in relation to threats from pandemics in today's world.

This chapter thus reports on research designed to extend and consolidate our understanding of the language of fear as it pertains to epidemics and pandemics. The first, now completed stage, involved the construction of a model characterising the cultural evolution from the Elizabethan period to the current times in relation both to the changing interpretations of what epidemics and pandemics are, and to the changing nature of the fears they generate (Section 2). The second step involved preliminary small-scale validation of the emergent model by applying it to texts produced by different communities over the ages in their interpretation of the events associated with such terms as Shakespeare's *burning fevers* (*Venus and Adonis* Line 761), and today's *anthrax attack*, *flu pandemic*, *smallpox epidemic*, *MMR scare* and, naturally, *Ebola outbreak* (Section 3). A third stage, still to be implemented, envisages wider corpus-based sampling (Section 4). The tentative conclusion reached is that separating the different and sometimes contradictory strands involved helps shed light on the 'language of fear' and the manipulation of these fears over the centuries by writers in many different English-language text types (Section 5).

## 2. Developing a cultural model

Given the factual and fictional intertwinings mentioned above, the term *pandemic* might be thought, in the tradition of folk etymology, to be a hybrid term derived from *epidemic* and *pandemonium* that blends their reference to the medical and the fearful. Naturally, this is not the case. Although the latter word *is* a hybrid coined by Milton in 1667 for use in *Paradise Lost* (Allen 1962: 207), the term *pandemic* (Greek



*pan-* ‘all’ + *demos* ‘people’) is modelled on *epidemic*. Significantly, as a term, *epidemic* dates back to Hippocrates but has undergone semantic changes (Martin/Martin-Granel 2006: 976) as medicine, and social perception of it, has evolved:

- (1) For Hippocrates, an epidemic meant a collection of syndromes occurring at a given place over a given period, e.g., winter coughs on the island of Kos or summer diarrheas on other islands. Much later, in the Middle Ages, the long and dramatic succession of waves of The Plague enabled physicians of the time to identify this disease with increasing precision and certainty; they began to recognize epidemics of the same, well-characterized disease. Then, with the historic contributions of Louis Pasteur and Robert Koch, epidemics of a characteristic disease could be attributed to the same microbe, which belonged to a given genus and species. The last stage in the semantic evolution of the term epidemic was the progressive acquisition of the notion that most epidemics were due to the expansion of a clone or clonal complex of bacteria or viruses known as the epidemic strain. More recently, microevolution of a clone of a bacterium (the epidemic strain) was shown to occur during an epidemic with person-to-person transmission.

Even so, the hybridity of the term *pandemic* cannot be overlooked. Despite having no etymological connection with *panic* or *pandemonium*, the term is vested with considerable ambiguity: a scientific term in the hands of, for example, epidemiologists and the statistics-oriented texts they produce, but also a fear-provoking term in other texts and contexts such as journalism, novels and films presenting pandemics as out-of-control global epidemics. Specifically, attitudes towards pandemics suggest that a diachronic pathway needs to be traced in terms of how different social layers perceive their fears of disease and communicate them (see Loiacono 2012b for a multi-tier approach to the analysis of medical communication). This ‘human approach’ to fear of disease, and its interpretation, embraces a complex rational-to-irrational cline, implying various perspectives: the layman’s, the doctor’s, the politician’s, the reporter’s and so on (Loiacono 2012b: 83-86). Medicine, itself, straddles these layers and is subject to an uninterrupted cycle of separating and associating scientific and social aspects; all of us, in our different ways, are caught up in the ensuing conflicts and fears that this cycle generates as the following webnews report (Mukpo 2014) dramatically highlights:

- (2) According to Nyenswah [Liberia's Assistant Minister of Health], rural belief in *juju* – West African magic – is also contributing to the *challenges* officials face. “Some people believe there is a *curse* that is causing the problem, and that there is nothing called Ebola.” Krakue agrees. “People don't know what the sickness is, and they prefer to go to the traditional healers,” he says. “They feel that they have been *bewitched*.” [...] In an interview with VICE News, an MSF [Médecins Sans Frontières] staff member who recently returned from Guinea described a *tense environment* for responders, explaining that the facility was attacked because locals heard a *rumor* that MSF had brought the virus to Guinea. “We were chased out of quite a lot of villages,” she says. “President [Alpha Condé] sent a delegation to sensitize the population, to get them to understand that Ebola exists. They were attacked and were evacuated the day after they arrived.” The *fear* and anger in communities is to some extent perfectly understandable. “*Ebola works inversely*,” the MSF worker explains. “Normally if you have someone who is sick, you take them to the hospital and they get better. With Ebola, you have to negotiate bringing someone to the hospital because *they'll almost certainly die there*.” When villagers notice a relative or friend becoming sick, *fear* and the potential for stigma overrides good judgment, and the victim is *hidden* away rather than taken to *containment facilities*, which are viewed as de facto *morgues*. [My italics]

Key fear-related wordings in this health news report, and the texts below, have been italicised to help focus on the process of recording and bridging social and scientific cultural divides. This report, typical of contemporary ‘health news’ reporting in its expression of multiple and often conflicting fears, describes respectively: the explicitly-mentioned fears of rural communities; doctors’ implied fears of being rejected professionally (as well as being physically ejected from their ‘workplace’); the fears, euphemistically described as ‘challenges’, facing West African government health officials who are incapable of containing the epidemic.

One of the implied meanings of this text, and it is not the only one, is ‘Who can blame these villagers as regards their fears about medical mismanagement by international organisations who are supposed to be protecting the rich and the poor on an equal footing?’ Suspicions about motivation and competence recently led Haitians to bring a class action (Quigley 2014: Chap. 1) against the UN for importing cholera into Haiti. The following report (Pilkington 2014) explains why:

- (3) The United Nations is facing a huge new lawsuit over the outbreak of cholera in Haiti that has widely been blamed on its peacekeepers, after 1,500 Haitian victims and their family members sued the international body in a federal court in Brooklyn in a class action. [...] Latest figures suggest that more than 9,000 people have died in the outbreak, which has spread from Haiti to Mexico, the Dominican Republic, Cuba and Puerto Rico, with a total of about 700,000 having been sickened.

The susceptibility of the term *pandemic* to varying and contradictory interpretations has become clear in the context of the 2009 swine flu scare. In an age sensitive to political, economic and legal factors associated with pandemics, the science of epidemiology, with its basis in statistics, plays a key role in the culture underpinning pandemics but does not appear to have contributed to its definition or to the reasons for declaring the existence of a pandemic. Doshi (2011) has pointed out that the WHO's three guidelines on pandemic influenza dated 1999, 2005, 2009, while containing no formal definition of an influenza pandemic, did, at least, contain a clear basis for declaring a pandemic, as it identified six risk levels. Hence, on June 11 2009, when Phase 6, "Increased and sustained transmission in the general population", was reached, the WHO declared a pandemic. When the expected devastation did not occur, governments who had spent a fortune in preparing for mass vaccination, were criticised by the public. Governments naturally blamed the WHO, which gave rise to a debate on the need to redefine the term pandemic, with many questions being raised such as: if a pandemic is based on predicted deaths in many countries, what are the predictions based on? Interestingly, Doshi (2011: 534) singles out the cultural origins of the confusion, identifying fear of contagion deriving from virus mutation as the basis for the naïve catastrophic/non-catastrophic dichotomy associated with predicting pandemics:

- (4) Virus-centric thinking is also at the bottom of the current practice of dichotomizing influenza into 'pandemic' and 'interpandemic' or 'seasonal' influenza on the basis of genetic mutations in the virus. This approach, however, ignores the fact that the severity and impact of epidemics, whether caused by influenza viruses or other pathogens, occur along a spectrum and not in catastrophic versus non-catastrophic proportions. We need responses that are calibrated to the nature of the threat rather than driven by these rigid categories.

Effectively, Doshi is implying that the 21<sup>st</sup> century management of pandemics and epidemics (as indicated in Table 1 below) is still 'plagued' by thinking carried over from earlier stages. Thus, among the various implications associated to these events, and the analysis of them performed by Doshi (2011) and others, is the conclusion that outdated cultural models are being adopted, and that a model, which sifts out the various layers of medical, linguistic and cultural evolution, is needed.

The working hypothesis underlying the research reported here is that the co-presence of cultural models in the transmission of fears about pandemic events is, in fact, an empowering factor, provided their co-presence is clearly communicated. In other words, the capacity to represent many points of view explicitly is, as it were, a 'saving grace', which is why, as mentioned above, institutions such as governments over the centuries have invested in reports that give 'both sides of the argument' and continue to do so. Compare, for example, Humphreys (1897) on the Royal Commission's findings on smallpox vaccination with Scottish Executive's MMR findings (MMR Expert Group 2002). Thus, despite criticism, the WHO's *Global Alert and Response* initiative ([www.who.int/csr/en/](http://www.who.int/csr/en/)) remains an important reference point in the monitoring of pandemics, with a policy that, at least overtly, avoids alarm but encourages preparedness:

- (5) Our vision: An integrated global alert and response system for epidemics and other public health emergencies based on strong national public health systems and capacity and an effective international system for coordinated response.

Yet, at the same time, choice of genre and channel of communication weigh in heavily. Highly indicative in this respect is the fact that the 2009 swine flu outbreak was the first flu 'pandemic' to occur in the Web 2.0 era, with the public reacting minute by minute (Chew/Eysenbach 2010: 10):

- (6) More minute changes were also observed and were found to be highly influenced by the media and external events. Examples of this included the large spike in tweets that resulted from the WHO pandemic level 6 announcement.

Mode and form of communication, and not just the content, is thus increasingly significant in medical communication. There are, indeed, considerable grounds for text analysts to draw on separate charts for scientific and social evolution. Tables 1 and 2 thus distinguish between medical and social models for epidemics over time.

	A. First Stage: 1550s-1850	B. Second Stage: 1850-2000	C. Third Stage: 2000>
1. Power over pandemics lies with:	God/Religion control man's fate and deaths arising from plagues and pestilence. Anti-miasma protection includes posies and nosegays as in 'A ring a ring of roses, A pocket full of posies [...]'	Science and preventive vaccination against invisible germs. Local authorities and national Public health bodies and onset of the statistical era (which began around 1840 in Britain and the US) Fund-raising <i>March of Dimes</i> -type solidarity campaigns begin	Information Society: its preventive preparedness <i>in</i> and <i>across</i> all its sectors. Global nature and reach of information about preparedness with interacting but competing agents, including the media and public opinion
2. What is feared	Sickness & plagues arising from contagion caused by miasma <i>i.e.</i> stench & smell found in the air	Sickness, plagues & epidemics from contagion through person-to-person infection via 'germs'; in later stages, new mutating microbes & biological warfare	Misinterpretation and unpreparedness at all social levels over new infecting agents (viruses, bioterrorism, accidents). Lack of information & education
3. Response to fear	Isolation, Quarantining and Resignation	a) Initial concern but b) physical & psychological protection through vaccination & immunisation c) indifference	Seesaw confidence mixing trust & distrust. Vision of preparedness in wider social contexts: educational, political and economic aspects

Table 1. Three-stage evolution of *pandemic fear* culture.

Table 1 presents a three-stage model of evolution of the culture of fear of pandemics taking three parameters into consideration. Table 2, instead, gives a summary of the medical aspects of infectious diseases that have given rise to the cultural frameworks indicated in Table 1.

(i) Name of disease	(ii) First described	(iii) Cause identified	(iv) History of vaccine or therapy	(v) Pandemic [P] Epidemic [E] Outbreak [O]	(vi) WHO data
Anthrax	70 BC Virgil 1752 Maret 1769 Fournier	1875 Koch bacterium <i>Bacillus anthracis</i>	Animals Pasteur 1881 Humans 1930/40s USSR; 1950/60s US/ UK 1944 Penicillin	[O] Inhalation type: Soviet military facility 1979; 79 cases 68 deaths	2001 US 5 deaths 2006 first UK death in 32 years: contact animal hides
Bubonic plague [Black Death; Plague of Justinian]	542 Procopius 1565: Crato pneumonic vs. bubonic transmission	1894 Yersin bacterium <i>Yersinia Pestis</i>	1897 Haffkine; but antibiotics ( <i>streptomycin &amp;</i> <i>tetracycline</i> ) now preferred	[P] 6 <sup>th</sup> century; 1346–1353 1855-1859 [E] London 1563-1665	1989-2003 38,310 cases (2845 deaths) in 25 countries
Cholera [Blue death]	500 BC Hippocrates; 1848 Snow (transmission)	1883 Koch bacterium <i>Vibrio cholerae</i>	1896 Kolle	[P] 1816-26; 29-51; 52-60; 63-75; 81-96; 99-1923; 1961-75	WHO estimate 3-5m. cases + 100-120,000 deaths per year
Diphtheria	500 BC Hippocrates 1883 Klebs	1884 Loeffler bacterium <i>Corynebacterium diphtheria</i>	1890 antitoxin Kitasato/Behring 1923 toxoid Ramon	[P] 1583- 1618; 1855- 1863 [E] 1860-1930 20,000 deaths annually in US	1990s WHO reported 157,000 cases and 5,000 deaths in ex- Soviet Union
Ebola [EVD]	1976 Description, isolation and naming of Ebola virus		2014 experimental vaccines ( <i>Zmapp</i> ) and therapies	1976-2013: 1716 con- firmed cases	2014: 8,376 cases with 4,024 deaths
HIV/AIDS [HIV 1986; AIDS 1982]	1980 Center for Disease Control USA	1983 Barré- Sinoussi/ 1984 Gallo	1987 AZT 1996 Gallo Combination therapy	[P] <i>unaids.org</i> : 30 m. deaths 1981-2011	2013: 35 m. cases. 11.7 m. <i>receiving</i> anti- retrovirals
Polio	1840 Heine	1908 Landsteiner <i>Poliovirus</i>	1950 Live Kopro- wski; 1955 IPV (In- activated) Salk; 1961 Oral (OPV) Sabin	[E] 1880-1955, AU, EU, US, NZ; Russian Federation	99% decrease in 1988-2013 period (406 cases in 2013)
Smallpox	910 Rhazes	1906 Negri filtered <i>variola</i> <i>virus</i>	1798 Jenner 1950 Freeze dried vaccinia	[P] 1400-1800 500,000 deaths per year	Last death 1978. Considered eradicated

Table 2. A medical view of infectious diseases.

Although accurate, Table 2 is not intended to be complete: it excludes many diseases that have given rise to epidemics and pandemics such

as elephantiasis, hanta, dengue, legionnaire's, leprosy, malaria, TB, typhus, typhoid fever, Creutzfeldt-Jakob disease and many more. It is intended as background information that guides clarity of understanding by separating medical data from the social and cultural impact that is accounted for in Table 1. Table 2 is based on historical data typically found in medical research articles, often as part of a larger set of tables relating to disease incidence and severity.

The first step in this research postulated the three-stage cultural model outlined in Table 1. Stage 1 in this evolution relates to texts in the 1550-1850 period. The Middle Ages attributed religious or quasi-religious origins to the Black Death: God's punishments for sins; part of an apocalyptic event preceding the second coming of Christ; corruption of the air, sometimes attributed to earthquakes in the Far East that released toxic substances; planetary alignment of Saturn, Jupiter, and Mars; rain of fire in areas between China and Iran; a battle between the sun and the sea in the Indian Ocean (Christakos et al. 2005: 110).

Of these causes, planetary alignment is referred to in Chaucer. In the *Knight's Tale*, Chaucer, well-versed in astrology as his *A Treatise on the Astrolabe* shows, has Saturn declare to his daughter Venus "My lookyng is the fader of pestilence" (Grigsby 2004: 108). Quarantining certainly existed at this time as a response to the Black Death, but was applied successfully only in Milan in the 1347-51 epidemic (Christakos et al 2005: 215). Elsewhere in Europe, Italy included, there was nothing doctors could do to prevent its spread. Boccaccio (Rigg 1930) tells us as much in the Decameron, in the Introduction to the First Day:

- (7) how many brave men, how many fair ladies, how many gallant youths, whom any physician, were he Galen, Hippocrates, or Æsculapius himself, would have pronounced in the soundest of health, broke fast with their kinsfolk, comrades and friends in the morning, and when evening came, supped with their forefathers in the other world!

The fears associated with causation in the Tudor period to the Black Death epidemics had essentially been restricted to the idea that contagion was caused by miasma, i.e. an infecting stench or smell in the air

(Porter 1999); the notion of containment was much more rigorous than in the 14<sup>th</sup> or 15<sup>th</sup> centuries. Shakespeare describes the act of searching out plague victims and quarantining them in *Romeo and Juliet* (Act 5 Scene 2 Lines 7-11), which in typical Elizabethan tradition falls under the Crown's control. Indeed, quarantining was among the plague orders promulgated by Elizabeth I in 1592 (Sloan 1974: 883):

- (8) In any town house where a case of plague is found the occupants must be shut in for a period of 6 weeks. In the country they may leave their home to attend to their duties in the fields, but must abstain from company and must carry a white rod at least 3 feet long. A special mark is to be fixed to the door of every infected house.

During the 1592-93 outbreak, the Crown ordered the complete closure of all theatres in London and adopted other measures, still with us, such as the careful handling and burning of clothes.

Stage 2 can be identified roughly with the hundred and fifty years between 1850 and the year 2000. Here science provided social control over invisible germs, following the work of Pasteur, Koch and many others. This period saw the growth of governmental control through Public Health legislation and institutions, and the rise of what can, in Western tradition, be called modern scientific medicine (Gotti/Salager-Meyer 2006: 10; Garzone/Sarangi 2007). The phenomenon feared was infection from germs (viruses and bacteria) and in the latter part of the 20<sup>th</sup> century, in particular, the fear of constantly mutating germs, resistance to drugs of diseases such as TB, and new forms of infection: AIDS, Ebola, SARS and prion-based diseases such as mad-cow disease. In this period, infection takes on connotations of something inside us as well as outside us and hence beyond our control other than through the work of doctors. This triggers a three-stage reaction: initial control, followed by psychological vaccination, and a short step away from indifference and overconfidence stimulated by the conviction that an antidote will always be found. A new cultural outlook was predominant as Humphreys (1999) has pointed out in her review of Tomes (1998):

- (9) Cleanliness came to be newly conceptualized in America during the four decades with 1900 at their center. This is a book about the transformation of a



cultural ideal – purity – from a concern for visible tidiness to a preoccupation with unseen but deadly microbes. [...] home economists and salesmen of the novel porcelain toilet alike urged American housewives to protect their families from the microscopic menace. Tuberculosis, with its apparent tendency to lurk in dark corners or unaired carpets, was the preeminent source of fear, followed closely by typhoid fever. The latter spurred plumbing reformations that first targeted the dreaded sewer gas, and then led to a preoccupation with keeping the bathroom disinfected and shiny, and with separating the household food supply from germ-carrying flies.

Stage 3 relates to the Information Society and coincides with the world of the Internet and globalization. The focus is on preventive preparedness in, and across, all its sectors. This means that people at all levels, whether in scientific communities, government or the media and so on listen carefully and talk to each other and learn from each other. The phenomenon feared is misrepresentation and misinterpretation of pandemics. Because the focus of fears falls on unpreparedness, a seesaw model of trust and distrust is presented in many genres from research articles to video games (Wright 2009), the latter indicating that preparedness is extended to children. Containment becomes an important factor on a global scale as does awareness of the underlying causes, e.g. factors facilitating diseases in their jump from animal to humans, no longer the preserve of governments or scientists, a lesson learnt in the UK, when government denial of mad cow disease proved costly as Hawa (2013) explains:

- (10) On March 20, 1996, Health Minister Stephen Dorrell told a stunned House of Commons that mad cow disease was ‘the most likely explanation at present for 10 cases of CJD that have been identified in people aged under 42’. [...] In response, Prof. Lacey said ‘This is one of the most disgraceful episodes in this country’s history’ and wanted ‘a full and independent inquiry into the conduct of the government and the way it has used and misused scientific advisors [...] the government has been deliberately risking the health of the population for a decade. The reason it didn’t take action was that it would be expensive and damaging politically particularly to the farming community who are their supporters [...] we are seeing the beginning of a very large number of people acquiring the disease in the next century’.

### 3. Applying the model to texts down the ages

The reconstruction of the cultural models and their effects highlights the rival claims of communities about what to fear most in an epidemic or pandemic. The claims are part of a cultural competition for credibility and are usually framed as an interventionist vs. rejectionist conflict, in which one community predominates over another in a battle of domination of cultures and communities. This was the case in the 1896 Gloucester smallpox outbreak with 434 deaths, caused by the city's rejection of vaccination, exactly 100 years after Jenner's smallpox vaccination breakthrough in the nearby town of Berkeley (Kotar/Gessler 2013: 257-261; Hopkins 1983).

The previous section has shown how the culture of fear has changed and suggested that subsequent models include prior models while, of course, prior models cannot include subsequent ones. This section investigates, in a necessarily summary way, how cultural models are expressed in texts. This stage of the research adopted basic keyword searching in online text archives, using the online search capabilities of the MWS-Web tool (Taibi *et al.* forth.) to circumvent the various archives' own limited search facilities; it based searches on the keywords listed in Table 1 such as *sickness, plague, God, religion, contagion, miasma, resignation, smell, protect* and so on, rather than on words relating directly to fear, as preliminary research pointed to fear of pandemics being constructed in texts without frequent recourse to words such as *fear, panic* and *scare*.

Archival searches ([www.opensourceshakespeare.org](http://www.opensourceshakespeare.org)) in relation to the word *contagion*, for which there are seven references in Shakespeare's works, and just one in the *Canterbury Tales*, ("That troubled is by the contagioun" *The Second Nun's Prologue* Line 73, suggest a clear link to miasma theories in the Stage 1 period: "to dare the vile contagion of the night and tempt the rheumy and unpurged air to add unto his sickness" (*Julius Caesar* Act II, Scene 1, Lines 892-3). As predicted in Table 1, in Shakespeare's world, plagues come directly from God; the reaction to them is resignation, as a combined search for *death, plague* and *fate* reveals:

Yet, 'tis the plague of great ones; Prerogated are they less than the base; 'Tis destiny unshunnable, like death: Even then this forked plague is fated to us. When we do quicken. (*Othello* Act III, Scene 3, Lines 1934-8)

A second port of call was the *Diary of Samuel Pepys* documenting the Black Death epidemic in 1665; the data searched for have been italicised and indicated in the diary entry as (a), (b), (c) and (d):

- (11) [June 7th 1665] This day, much against my Will, I did in Drury-lane see two or three houses (a) *marked with a red cross upon the doors*, and (b) *“Lord have mercy upon us” writ there* – which was a sad sight to me, being the first of that kind that to my remembrance I ever saw. It put me into (c) *an ill conception of myself and my smell*, so that I was forced to (d) *buy some roll tobacco to smell to and chew – which took away the apprehension*. [My italics]

Here, too, the data match the Stage 1 model: the reaction is (a) quarantining against contagion and (b) resignation in the face of God’s will; the phenomenon feared is miasma contagion; (c) the power over the pandemic is (b) God’s will and (d) tobacco’s anti-miasma, stench-reducing powers. The significance of Divine Will as the ultimate cause and consequent resignation is underscored three days later:

- (12) To bed, being troubled by sickness, and particularly how to put my things and estates in order, *in case it should please God to call me away*. [My italics]

A major hallmark of Stage 2 is Public Health’s fight against disinterest, a matter clearly identified in the Metropolitan Life Insurance Company’s 1929 *Lucky Babies* advertisement:

- (13) Lucky indeed is the baby who has a mother wise enough to follow the doctor’s advice “Bring the baby to me when he is six months old and let me protect him against diphtheria. That is one disease he need never have.” Last year more than *100,000 children who were not inoculated had diphtheria*. About 10,000 of them died [...]. *Will 10,000 innocents be sacrificed next year because some doctors have failed to warn mothers or because mothers have forgotten their doctors’ warning?* Even when diphtheria is not fatal, it frequently leaves victims with weakened hearts, damaged kidneys, ear trouble, or other serious after effects. [...] If your child, so far unprotected, has not been stricken by this arch-enemy of childhood, your good fortune is a matter of

luck – not precaution. If he is more than six months old, take him to your doctor without delay and have him inoculated. [My italics]

With its plea for child protection, and fears about indifference and complacency over vaccination, how culturally different things are now from before. The advert, part of an 85 million document campaign by the company, continues:

- (14) This disease has [...] disappeared in many cities where the people have backed their health authorities in preventing diphtheria by inoculation with toxin-anti-toxin. But *diphtheria finds its victims* wherever people have been *misled by false* reports as to the alleged danger of inoculation. The Metropolitan Life Insurance Company will gladly cooperate through its local managers, agents and nurses, with State or city authorities to stamp out diphtheria. [My italics]

What is it that distinguishes this 1929 text from the Stage 3 *Brief moment of merriment* text analysed in Table 3 below, part of a health news report by Strudwick (2014)? There are certainly common threads. The 1929 campaign, with its grass roots' appeal, is the forerunner of expressions of solidarity, e.g. the historic *March of Dimes* (<http://www.marchofdimes.org/>), instigated by Roosevelt in 1938 to combat polio, which continue today with charity races and TV fund-raising campaigns for medical research. However, a crucial difference lies in the complex ways in which communities interact or, rather, fail to interact. In the earlier text, two communities are conceived of as interacting directly: a) mothers and babies and b) doctors. Certainly, the question “Will 10,000 innocents be sacrificed next year because some doctors have failed to warn mothers or because mothers have forgotten their doctors' warning?” contains an implicit reference to the need to involve other actors, such as the Metropolitan Insurance Company itself. However, the role attributed is ancillary rather than primary: the reference, in the last line, to co-operation with “State and city authorities” shows how fear of pandemics is contained within and *by* the Stage 2 Public Health framework. Its prevention-is-better-than-cure creed is superseded in the Information Society, as shown by the 2014 *Brief moment* text, and others from Stage 3 quoted in this chapter, by the constant questioning

of the roles, competence and preparedness of the multiple actors involved. Stage 3 thus works outside and sometimes against the conventional frameworks set up by the powers-that-be and hence goes beyond Stage 2's preventive protection by requiring a broader reference framework to be adopted by all levels of society.

STAGE 2: 1. protection 2. statistics 3. indifference	[It was a brief moment of merriment.] 1 Effective treatment might have been <i>developed in 1996</i> , 2 but of today's 34 million <i>sufferers</i> , only about a third receive it; 3 and in the West there is another disease: apathy.
STAGE 2: 5. indifference	4 Barré-Sinoussi is concerned that 5 <i>young people are "too relaxed" about HIV</i>
STAGE 3: 6. & 7. unpreparedness	6 because "the education campaigns are not sufficient, 7 there is <i>not enough information</i> ".
STAGE 2 9. person-to-person infection via 'germs' 10. protection	8 A 2013 survey in Scotland found that 9 one in 10 pupils think that HIV can be <i>transmitted through kissing</i> . 10 "They [young people] feel today that it's easy, <i>there is a treatment</i> ."
STAGE 3: 11. [doctor's] fear of lack of information	11 They have not heard about <i>comorbidities</i> on long-term treatment."
STAGE 3: 12-14. Doctor's and patients' joint realisation of the harm caused by lack of information	12 Eight to 10 per cent of positive people develop cancer or cardiovascular disease. 13 "They look at me and they're like ' <i>Nobody told us that</i> '." 14 She looks incredulous, <i>thrusting her hands up in anger</i> – not at them but at us: the adults.
STAGE 3: 15-18 See-saw trust & distrust in teachers' preparedness 19 & 20 Vision of a wider context	15 She supports legislation to ensure mandatory sex <i>education in schools</i> , 16 but also "to make sure that the <i>education is well done...</i> 17 if the teachers are not well informed, 18 they will not give the best information to students". 19 Even once sex education is improved, 20 <i>manifold problems must be overcome</i> .

Table 3. Clause-by-clause progression in *A brief moment of merriment*. (My italics)

#### 4. Discussion

The texts quoted above can be looked at in other ways. If, for example, we consider Hasan's (1996) Generic Structure Potential model, which identifies optional and obligatory steps and sequencings in meaning-making narratives, for example in bedtime stories, we can begin to see that something similar occurs in accounts of fears about pandemics. When we provide a clause-by-clause analysis of the *Brief moment of merriment* text, we can see how each clause is part of a stepped progression (note the dotted lines between Stages 2 and 3) describing the Stage 2 culture of young people despite their living in a Stage 3 world. Similar progressions from one historically defined cultural tenet to another emerge when other texts, including those quoted, are examined. This provides some validation for the diachronic approach advocated and the hypothesis that the co-presence of cultural models in texts is a sign of their reliability as texts. All this suggests that fears expressed in texts about pandemics can be characterized in terms of their selection of the nine steps (A1 to C3) posited in Table 1.

In turn, this also raises the question as to whether, on the basis of the initial evidence gathered through online searches, the model presented above is concordanceable in terms of obligatory and optional steps and extendable to the five steps-per-disease information (*i-v*) provided in Table 2. Such a step opens up the model to further validation and, in particular, quantification in terms of comparative web studies. Accordingly, a search (cf. Table 4 below) was made with the MWS-Web tool for one possible configuration: namely (*i*) (the disease feared: anthrax) + C2 (the phenomenon feared: bioterrorism) + C3 (response to fear: preparedness). Carried out in relation to five websites – the *Lancet*, the *BMJ*, the *CMAJ*, the *BBC* and the *New York Times* – the search produced a substantial number of results, 91 in all, for this combination of words. The results all relate to the 2001 anthrax scare known as *Amerithrax* from its FBI case name ([www.fbi.gov/about-us/history/famous-cases/anthrax-amerithrax](http://www.fbi.gov/about-us/history/famous-cases/anthrax-amerithrax)). As Table 4 also shows, rather than the usual single column concordance, the *MWS-Web* tool produces multiple-column concordances, in this case three different keywords each with co-texts. This facilitates

tracking of cultural and conceptual progressions, which can be easily perceived thanks to the side-by-side onscreen viewing (presented in Table 4 as three separate rows owing to page limitations). The overlapping co-texts show, for example, the close textual proximity of the words searched for.

The screenshot shows a search interface titled "Co-text Results: Table Concordancing". It features search filters for "anthrax", "bioterrorism", "preparedness", and "All". The search results are displayed in a table with three columns. The first column contains text snippets, the second column contains the word "anthrax", and the third column contains text snippets. The search term "fear" is entered in the search box. The results are filtered from 91 total entries to 5 entries.

Text Snippet	Word	Text Snippet
... back until bioterrorism fears emerged after the	anthrax	attacks of ... of bioterrorism-preparedness ...
about the ease of a large-scale release of	anthrax,	... an emergency preparedness official ...
as fears of attack with another biological agent,	anthrax,	spread across the country. Mr.
public pressure to respond to public fears about	anthrax,	the government and the drug industry took steps
With public fear of	anthrax	still escalating, the federal government is ramping up

Showing 1 to 5 of 5 entries (filtered from 91 total entries)

emerged after the anthrax attacks of ... of	bioterrorism-preparedness	...
That federal push stems in part from	bioterrorism	experts' fears about the ease of a large-scale
up its efforts to prepare for another possible	bioterrorism	threat -- smallpox.
emerged after the anthrax attacks of ... of	bioterrorism-preparedness	...
a large-scale release of anthrax, ... an emergency	preparedness	official ..

Table 4. Lexical and cultural progressions in fear-related concordances.

While space restrictions make it impossible to reproduce and examine all 91 concordances obtained, the five concordances that are shown in Table 4 indicate this approach's potential in relating cultural to lexical. They are the result of a secondary search within the data set for the word *fear*. They provide empirical confirmation of the relative ab-

sence of fear-related words as postulated in *Section 1* but also show that ‘fear’ words cluster around the name of the disease, a finding backed up in this data set for words such as *threat*, *panic* and *scare*. How indicative this small sample is of a general trend remains to be seen. Significantly, the foundations for an approach to corpus investigation that integrates cultural and lexical aspects have been laid in a way that facilitates comparison of texts from the past with those of the present.

## 5. Conclusions

Pandemics are always in the news. Hardly a day goes by without a leading international newspaper announcing the threat of a pandemic. In asserting, in various parts of the chapter, and in particular in *Section 1*, that fears are linked in varying ways to the commitment in the fight against disease, we are voicing the concerns of society, in general, and those of the medical profession, in particular. However, these concerns are voiced within cultural frameworks with knock-on effects for texts and genres, and consequences for all those working within the vast preserve of text and discourse studies. There are clear implications for specialists in different areas of text and communication studies, for example, for those concerned with cross-cultural communication in a global society or those, like the current author, dealing with the comparison of historical and contemporary texts of medical communication (Loiacono 2012a, 2013). What is special about the language of fear is the unending relationship between the past, the present and the future to be explored in the next stage of this research.



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